

# EXHIBIT 14



# IBM chooses AppZero as application virtualization partner for SmartCloud

**Analyst:** Rachel Chalmers

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Since September 2011, IBM Distinguished Engineer Mac Devine has served as the Director and CTO for the SmartCloud portfolio within IBM Global Technology Services (GTS). In practice, that makes him responsible for SmartCloud's technical strategy and architecture, and for choosing SmartCloud partners. Most recently, Devine has been involved in a partnership between AppZero and IBM to provide application migration services to enterprises as they adopt cloud computing.

**Company name:**

IBM

**Activities:**

Cloud computing

**Head office:**

Armonk, NY

**Number of employees:**

440,885

**LY revenue:**

\$106.92bn

**LY net income:**

\$15.86bn

**Key suppliers:**

AppZero, CohesiveFT, Hadoop

## Early Adopter Snapshot

The branded ecosystem of SmartCloud products includes cloud-enabling technologies, PaaS and SaaS, but it's the IaaS offerings that interest us here. Like the club in The Blues Brothers that offers both kinds of music: country and Western, IBM offers both kinds of cloud: public and hybrid. SmartCloud Enterprise (SCE) is a shared public cloud – IBM's answer to Amazon Web Services (AWS) and Rackspace Cloud. For customers that want their cloud private, hosted and managed, IBM offers SmartCloud Enterprise+ (SCE+).

Customers turn to SmartCloud for all kinds of reasons: some to improve their regulatory compliance; others to offer a self-service extension of enterprise infrastructure; still others

are lured by the prospect of a managed service from IBM completely dedicated to them. There are several large financial services firms already up and running on SCE. Typical workloads include development and testing, spillover capacity, early exploration and some big data.

SCE, which has been available since 2011, boasts 2,200 customers. SCE+ has just become generally available. Both are enjoying a steady pipeline of customers who want to transition away from some of Big Blue's other Global Services businesses – for example, e-business hosting, application hosting or strategic outsourcing. Because SmartCloud is more virtualized and automated, it's easier for IBM to run it and cheaper for customers to use.

### **Strategic vision and business drivers**

"All IBM GTS customers are potential SmartCloud users, and that's a multi-billion dollar business," Devine says. "The intent is for us to lower the operations cost while giving them an opportunity to be more flexible in terms of what they're able to accomplish." Where IBM's strategic outsourcing business requires the company to build customized hosted offerings, with SCE+ IBM can offer more standardized services. That said, SmartCloud can't achieve the same level of customization. Everything's a tradeoff.

Nevertheless, cross-selling SmartCloud into the IBM GTS customer base is likely to prove lucrative. But Devine says that besides these cross-selling opportunities, SmartCloud is reaching new customers, as well. Demand is spiking upward. IBM has found that three-quarters of buyers either use or plan to use public cloud services within the next twelve months. There's also a lot of activity around applications and SaaS. Five years ago, Devine observes, VCs funded ISVs to offer licensed software on-premises. Today, the same VCs fund ISVs that sell subscriptions to hosted applications. Devine describes this new breed of software company as 'born in the cloud.'

### **Challenges and obstacles**

These apps don't always stay in the cloud. IBM sees apps developed in hosted environments being 'harvested' and brought on-premises. It also sees organizations looking to migrate enterprise

applications into the public cloud. Because of this fundamental need for two-way freedom of movement, Devine says, mobility is key. (This hybrid pattern also explains IBM's decision to offer both SCE and SCE+.)

To Devine, a cloud-enabled workload is one that was born in the enterprise but needs to be able to run either on-premises or in the public cloud. Then there are cloud-centric workloads, typically agile extensions to existing assets or all-new applications. With SmartCloud, IBM is trying to address both workloads. That's why it has turned to AppZero and to Cohesive Flexible Technologies (CohesiveFT) to give its prospects and customers comprehensive application migration capabilities.

Think of it this way. There are two kinds of workloads – cloud-enabled (born in the enterprise) and cloud-centric (born on the cloud) – that IBM wishes to help its customers move into two kinds of cloud: SCE and SCE+. With AppZero, IBM can capture an application environment, transform it and migrate it to a SmartCloud environment. CohesiveFT performs the same kind of encapsulation at the network-virtualization layer.

### **Deployment summary**

It was Devine who performed the due diligence exercise in 2011 that reviewed IBM's options for migration tools. He narrowed down the options to CohesiveFT and AppZero, and then he introduced the companies to each other. Through the resulting Elastic Enterprise Applications partnership, Cohesive handles networking and automation for Linux, while AppZero offers a Windows virtualized application container. Devine is proud that the partners got an offering up and operational in six weeks.

His problem since has been figuring out how best to wrap IBM's engine around that offering. He turned to an application migration services team that already existed within GTS. In the past, when a customer wanted to move from their on-premises environment to, say, strategic outsourcing, this team would assemble various tools and manual processes to make that migration happen. Now, the team can turn to AppZero and CohesiveFT for rapid migration to the far more standardized set of features and functions embodied in SCE+. Customers that can do it themselves may take advantage of self-service migration to SCE. Either way, ideally, the customers should end up with a more optimized environment at a lower cost point.

### **Innovation and roadmap**

AppZero is not without its limitations. It can move like OS to like OS – say, Windows 2003 to Windows 2003, or Windows 2008 R2 to Windows 2008 R2 – but it can't move Windows to Linux. The

software has to stop the application before moving it. Moving shared databases will move all databases unless a DBA manually prunes the migration. It doesn't support SharePoint or Exchange.

There are some powerful upsides, though. It's fast – migration takes minutes rather than hours – and it's great for migrating (for example) HP OpenView users across to IBM Tivoli. There's no vendor lock-in because the container dissolves after the move. And while it's constrained by OS, AppZero can migrate to and from any hypervisor, physical or cloud environment. This is a key part of its appeal for IBM because SmartCloud is based on KVM and Power virtualization, and the prospective customers mostly use VMware. In other words, AppZero is strategically critical to IBM's ability to extract workloads from its customers' proprietary environments and run them on IBM's own relatively open cloud. That's a win for customers and perhaps an even bigger win for IBM.

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